

We Claim:

1. A method of inhibiting the maturation of an antigen presenting cell, comprising contacting *in vitro* said antigen presenting cell and an effective amount of a compound selected from the group consisting of CP1, Compound 15, and mixtures thereof, for a time and under conditions effective to inhibit maturation of said antigen presenting cell.

2. The method of claim 1, wherein said antigen presenting cell is a dendritic cell.

3. The method of claim 1 or 2, wherein inhibition of maturation of said antigen presenting cell is accompanied by a reduction in the level of expression of one or more surface markers selected from the group consisting of CD80, CD86, and MHC II by said antigen presenting cell.

4. The method of any one of claims 1-3, wherein inhibition of maturation of said antigen presenting cell is accompanied by a reduction in the level of expression of one or more cytokines selected from the group consisting of IL6, IL12, interferon alpha, and interferon gamma by said antigen presenting cell.

5. A method of inhibiting the maturation of an antigen presenting cell in a mammal, comprising administering to a mammal other than a rat or a mouse an effective amount of a compound selected from the group consisting of CP1, Compound 15, and mixtures thereof, and inhibiting maturation of said antigen presenting cell.

6. The method of claim 5, wherein said antigen presenting cell is a dendritic cell.

7. The method of claim 5 or 6, wherein inhibition of maturation of said antigen presenting cell is accompanied by a reduction in the level of expression of one or more surface markers selected from the group consisting of CD80, CD86, and MHC II by said antigen presenting cell.

8. The method of any one of claims 5-7, wherein inhibition of maturation of said antigen presenting cell is accompanied by a reduction in the level of expression of one or more cytokines selected from the group consisting of IL6, IL12, interferon alpha, and
5 interferon gamma by said antigen presenting cell.

9. A method of inhibiting an inflammatory response in a mammal in need thereof other than a rat or a mouse, comprising:

10 (a) isolating peripheral blood mononuclear cells, or a monocyte-containing fraction thereof, from said mammal;

(b) contacting *in vitro* said isolated peripheral blood mononuclear cells or monocytes and a composition containing an effective amount of cytokines that
15 differentiate monocytes to immature dendritic cells for a time and under conditions effective to generate immature monocyte-derived dendritic cells;

(c) contacting *in vitro* said immature monocyte-derived dendritic cells and an effective amount of a compound selected from the group consisting of CP1,
20 Compound 15, and a mixture thereof for a time and under conditions effective to prevent maturation of said immature monocyte-derived dendritic cells; and

(d) administering said immature monocyte-derived dendritic cells to said mammal, reducing the ability of dendritic cells of said mammal to drive cognate
25 interactions with T cells and inhibiting said inflammatory response in said mammal.

10. The method of claim 9, wherein said cytokine composition of step (b) comprises granulocyte-macrophage colony-stimulating factor and IL4.

11. The method of claim 9, wherein said inflammatory response is selected from the group consisting of abscesses and post-surgical adhesions, sepsis; rheumatoid arthritis; myasthenia gravis; inflammatory bowel disease; colitis; systemic lupus erythematosus; multiple sclerosis; coronary artery disease; diabetes; hepatic fibrosis; psoriasis; eczema; acute respiratory distress syndrome; acute inflammatory pancreatitis; endoscopic retrograde cholangiopancreatography-induced pancreatitis; burns; atherogenesis of coronary, cerebral, and peripheral arteries; appendicitis; cholecystitis; diverticulitis; visceral fibrotic disorders; wound healing; skin scarring disorders; granulomatous disorders; asthma; pyoderma gangrenosum; Sweet's syndrome; Behcet's disease; primary sclerosing cholangitis; and cell, tissue, or organ transplantation.

12. A method of inhibiting an inflammatory response in a mammal in need thereof other than a rat or a mouse, comprising:

administering to said mammal an effective amount of a compound selected from the group consisting of CP1, Compound 15, and mixtures thereof, preventing dendritic cells or other antigen presenting cells of said mammal from maturing and rendering them incapable of stimulating T cell activation, thereby inhibiting said inflammatory response in said mammal.

13. The method of claim 12, wherein said antigen presenting cells are B cells or macrophages.

14. The method of claim 12 or 13, wherein said inflammatory response is selected from the group consisting of abscesses and post-surgical adhesions, sepsis; rheumatoid arthritis; myasthenia gravis; inflammatory bowel disease; colitis; systemic lupus erythematosus; multiple sclerosis; coronary artery disease; diabetes; hepatic fibrosis; psoriasis; eczema; acute respiratory distress syndrome; acute inflammatory pancreatitis; endoscopic retrograde cholangiopancreatography-induced pancreatitis; burns; atherogenesis of coronary, cerebral, and peripheral arteries; appendicitis; cholecystitis; diverticulitis; visceral fibrotic disorders; wound healing; skin scarring disorders; granulomatous disorders; asthma; pyoderma gangrenosum; Sweet's syndrome;

Behcet's disease; primary sclerosing cholangitis; and cell, tissue, or organ transplantation.

15. A method of inhibiting an inflammatory response in a mammal in need thereof other than a rat or a mouse, comprising:

(a) isolating peripheral blood mononuclear cells, or a monocyte-containing fraction thereof, from said mammal;

(b) contacting *in vitro* said isolated peripheral blood mononuclear cells or monocytes and a composition containing an effective amount of cytokines that differentiate monocytes to immature dendritic cells for a time and under conditions effective to generate immature monocyte-derived dendritic cells;

(c) contacting *in vitro* said immature monocyte-derived dendritic cells and an effective amount of a compound selected from the group consisting of CP1, Compound 15, and mixtures thereof for a time and under conditions effective to prevent maturation of said immature monocyte-derived dendritic cells;

(d) contacting *in vitro* said immature dendritic cells and naïve T cells to generate T regulatory cells; and

(f) administering said T regulatory cells that suppress T effector cells to said mammal,

thereby suppressing said inflammatory response.

16. The method of claim 15, further comprising contacting said T regulatory cells and IL2 for a time and under conditions effective to expand the number of said T regulatory cells.

17. The method of claim 15 or 16, wherein said inflammatory response is selected from the group consisting of abscesses and post-surgical adhesions, sepsis; rheumatoid arthritis; myasthenia gravis; inflammatory bowel disease; colitis; systemic lupus erythematosus; multiple sclerosis; coronary artery disease; diabetes; hepatic
5 fibrosis; psoriasis; eczema; acute respiratory distress syndrome; acute inflammatory pancreatitis; endoscopic retrograde cholangiopancreatography-induced pancreatitis; burns; atherogenesis of coronary, cerebral, and peripheral arteries; appendicitis; cholecystitis; diverticulitis; visceral fibrotic disorders; wound healing; skin scarring disorders; granulomatous disorders; asthma; pyoderma gangrenosum; Sweet's syndrome;
10 Behcet's disease; primary sclerosing cholangitis; and cell, tissue, or organ transplantation.

18. A method of inhibiting an inflammatory response in a mammal in need thereof other than a rat or a mouse, comprising:

15 administering to said mammal an effective amount of a compound selected from the group consisting of CP1, Compound 15, and mixtures thereof, generating T regulatory cells that suppress T effector cells and that inhibit said inflammatory response.

20 19. The method of claim 18, wherein generation of said T regulatory cells is associated with a lack of maturation of dendritic cells or other antigen presenting cells.

25 20. The method of claim 19, wherein said antigen presenting cells are B cells or macrophages.

21. The method of any one of claims 18-20, wherein said inflammatory response is selected from the group consisting of abscesses and post-surgical adhesions, sepsis; rheumatoid arthritis; myasthenia gravis; inflammatory bowel disease; colitis; systemic lupus erythematosus; multiple sclerosis; coronary artery disease; diabetes; hepatic
30 fibrosis; psoriasis; eczema; acute respiratory distress syndrome; acute inflammatory pancreatitis; endoscopic retrograde cholangiopancreatography-induced pancreatitis;

burns; atherogenesis of coronary, cerebral, and peripheral arteries; appendicitis; cholecystitis; diverticulitis; visceral fibrotic disorders; wound healing; skin scarring disorders; granulomatous disorders; asthma; pyoderma gangrenosum; Sweet's syndrome; Behcet's disease; primary sclerosing cholangitis; and cell, tissue, or organ

5 transplantation.

22. The method of any one of claims 15-21, wherein expression of both IL10 and IL19 by said T regulatory cells is upregulated.

10 23. The method of claim 22, wherein said T regulatory cells are a subset of CD3+ T cells.

24. The method of any one of claims 15-21, wherein expression of IL17 in said T effector cells is downregulated.

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25. The method of claim 24, wherein said T effector cells are a subset of CD3+ T cells.

20 26. A method of measuring the immunological activity of CP1 or Compound 15 in a mammal, comprising:

administering CP1 or Compound 15 to said mammal;

administering Candin to said mammal; and

measuring the inhibition of delayed type hypersensitivity skin lesions elicited by said Candin,

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wherein a reduction in lesion size in said mammal compared to lesion size in an untreated control mammal that has not received CP1 or Compound 15 indicates that said compounds are effective in inhibiting a localized inflammatory response.

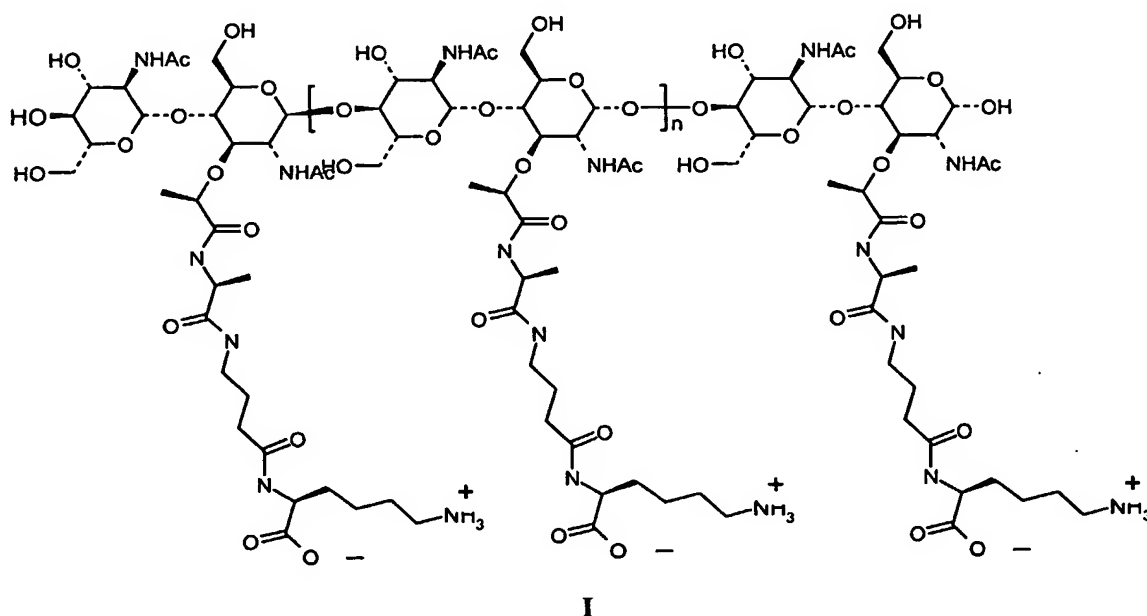
30 27. The method of claim 26, wherein said immunological activity is the activity of T regulatory cells.

28. The method of claim 26, wherein said immunological activity is associated with inhibition of cognate interactions between antigen presenting cells and naïve T cells.

29. The method of claim 28, wherein said antigen presenting cells are dendritic cells.

30. The method of claim 28, wherein said antigen presenting cells are B cells or macrophages.

31. A synthetic polymeric antigen having the structure shown in Formula 1:



where n is an integral in the range of from about 375 to about 75, or a pharmaceutically acceptable salt thereof.

32. A composition, comprising said synthetic polymeric antigen or pharmaceutically acceptable salt thereof of claim 31, and a buffer, carrier, diluent, or excipient.

33. A pharmaceutical composition, comprising said synthetic polymeric antigen or pharmaceutically acceptable salt thereof of claim 31, and a pharmaceutically acceptable buffer, carrier, diluent, or excipient.

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